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Chief Executive Officer/Administrator

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April 11, 1996

Office of the Secretary
Federal Communications Commission
Washington DC, 20554

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Dear Commission,

It is our pleasure to submit to you a brief statement concerning the Telecommunications Bill. The promises and potential it holds for telecommunication services in our region of the country are many. We appreciate your time in considering our experience implementing a rural telemedicine project and hope it assists you in achieving your goal of just, reasonable, and equitable telecommunication services to rural regions like ours

Sincerely,

A handwritten signature in cursive script that reads 'Sally Davis/dw'.

Sally Davis, MA
Director of Education & Telemedicine

A handwritten signature in cursive script that reads 'Danielle Waggoner'.

Danielle Waggoner, MPA
Telemedicine Coordinator

A handwritten signature in cursive script that reads 'Luanne Skrenes/dw'.

Luanne Skrenes, RN, BSN
Telemedicine Education Coordinator

c: Common Carrier Bureau
 International Transcription Service
 Office of Rural Health Policy

Attachment

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Comments to the Federal Communications Commission
Regarding the Telecommunications Bill
April 11, 1996

Marquette General Hospital in Marquette, Michigan applauds your efforts with the telecommunications bill and fully echoes your concerns to provide just, reasonable, and equitable telecommunication service to rural areas. The purpose of this communication is to inform you of our experience in implementing a rural telemedicine network so you may apply our field experience toward your goal.

Marquette General Hospital, Incorporated is a 397 bed regional medical center located in the Upper Peninsula of Michigan, a federally designated medically underserved area. This region has a telemedicine program, the *Upper Peninsula Telemedicine Network*, of which Marquette General Hospital is the hub. This network is partially supported by federal grants from the Rural Utilities Services and the Health Resources and Services Administration. Since implementation began in February, 1995, 14 sites have been connected through video teleconference and teleradiology technology (see map). Video teleconferencing is transmitted over basic rate Integrated Services Digital Network (ISDN) at 112 Kbps, and the teleradiology over plain old telephone service (POTS).

Network planning focused on user acceptability and network sustainability beyond grant funding. We are committed to pushing the envelope on the range of applications that can be conducted on our current low bandwidth network. While most telemedicine projects in the United States use wider bandwidth, 1/4 T1 at minimum, this was not an option available to network participants due to the high ongoing cost. Increasing bandwidth continues to be hindered for this reason. The attached table illustrates current transmission costs to network participants and the cost to upgrade the network from 112 Kbps to 336 Kbps, or 1/4 T1.

In the first year of operation, 498 teleradiology transmissions were sent between participating sites. The primary problem for practitioners has been the slow rate of transmission. Maintaining an ISDN line for both the video teleconference and the teleradiology systems has been considered briefly but is cost prohibitive for the very rural and very small health care facilities.

Video teleconferencing applications have included distance learning, administration, clinical applications, and rental to community organizations. Since installation of the video teleconference systems 15 months ago, a total of 413 connections have taken place involving over 6,000 participants. Telemedicine (physician to patient) connections to-date include 8 psychiatric consultations, one of which was conducted under emergency conditions, 3 psychiatric clinics, and 1 pediatric surgical follow-up. Medical applications that involve discussion of patient care include 4 tumor boards, 3 pediatric/neonatal staffings, and 6 psychiatric staffings. Involving professionals from remote communities has provided a much needed continuum of care. Besides saving the patient and family time and money, critical health care dollars have remained in the rural communities.

The telepsychiatry professionals are of the opinion that the technology is adequate for consulting with

established patients. Improved picture quality will be necessary to evaluate new psychiatric cases with confidence. Applying this improvement to existing equipment would involve multiplying the monthly cost of each ISDN line on the attached table by three. This does not include equipment upgrades to accommodate this additional bandwidth. Other physician groups such as emergency department physicians and pediatric subspecialists have expressed interest in connecting with network sites to assess patients only after picture quality has been improved. At this time the logical means of improving picture quality is to increase bandwidth. The cost of upgrading existing equipment and of increasing bandwidth is not a consideration for most of our sites.

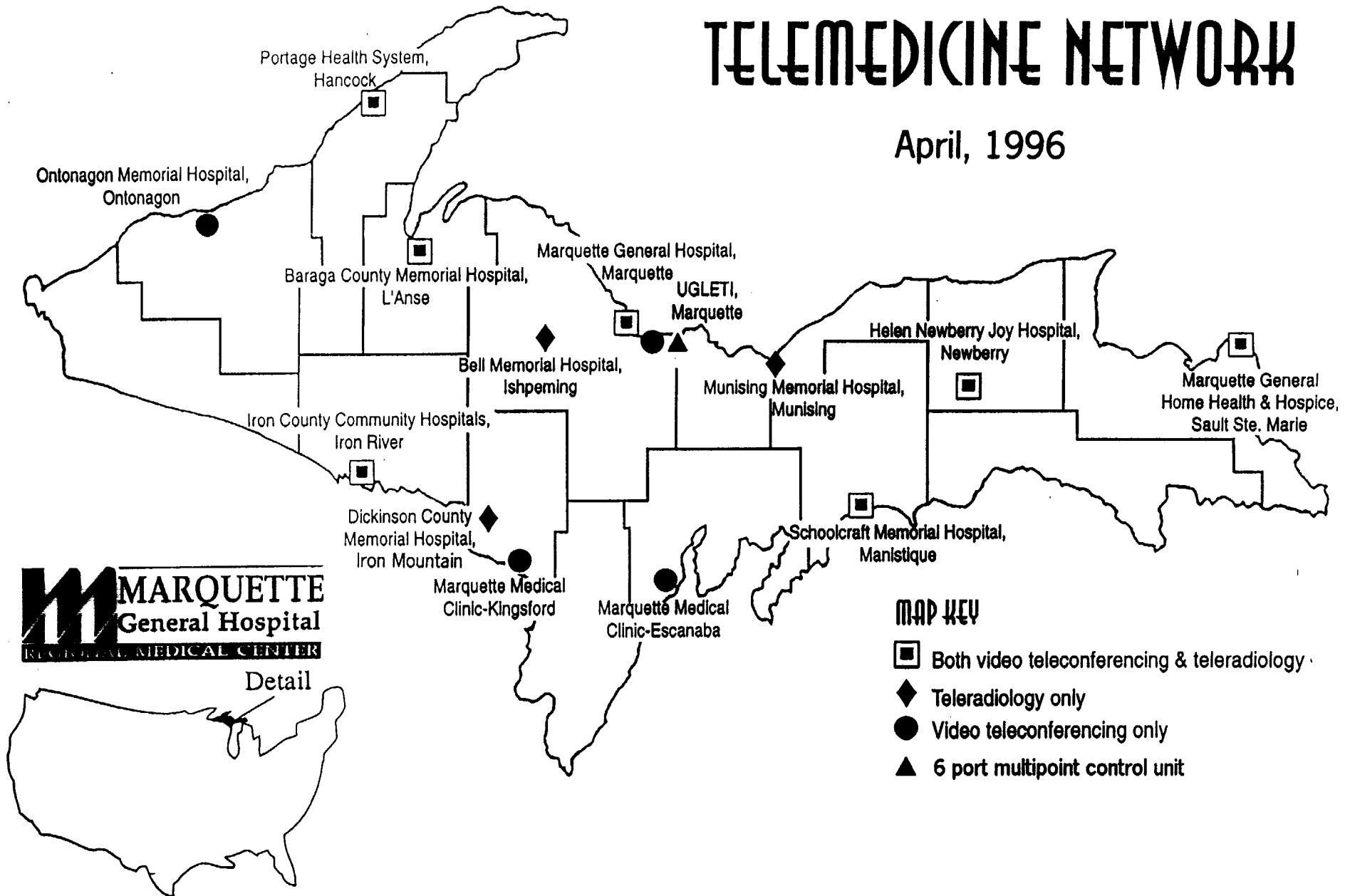
Ameritech and AT&T cooperate to provide all the region's ISDN hardware and AT&T provides nearly all the network's long distance service. Each of the ISDN lines connecting network sites goes through the switch in Marquette and are foreign exchanged so all are Marquette numbers. This design was necessary because ISDN service was not available in distant-site communities.

ISDN service is distance sensitive. The further the signal must travel from the switch the higher the cost. The least expensive monthly fee for this service is in Marquette at \$20 per month for one ISDN line. Marquette is the most populous city of Upper Michigan with 23,000 residents, 70,887 county residents. The most expensive monthly fee for this service is Sault Sainte Marie at \$290 per month for one ISDN line, a county with 34,604 residents. The attached table illustrates how small, rural parts of the region must pay higher rates for their telecommunication service than the most populated areas.

Our regions health care facilities have considered various solutions for video, voice, and data transmission. It is our perception that the lack of competition in rural areas limits accessibility to basic service and drives costs to levels that are not reasonable for small, local health care facilities. In our case, basic service is bandwidth. The promises and potential for telemedicine to affect access, quality, and cost of health care in rural areas will be achieved only when these issues are resolved.

UPPER PENINSULA TELEMEDICINE NETWORK

April, 1996



Upper Peninsula Telemedicine Network
Current & potential ISDN transmission costs to the network

Community & County with Telemedicine	Population of the County Served by Telemedicine, 1990 Census	Bed Size of Hospital Serving the Community with Telemedicine*	Distance of Community with Telemedicine to the Switch in Road Miles†	Monthly Cost of One ISDN line for Telemedicine in each Community	Monthly Cost of Increasing Bandwidth to 1/4 T1 (3 ISDN lines)
Marquette, Marquette	70,887	397	The switch is located in Marquette	\$160☆	\$480
Newberry, Luce	5,763	32	105	220	660
Sault Sainte Marie, Chippewa	34,604	86 acute care 51 long term care	165	285	855
Manistique, Schoolcraft	8,302	38	87	220	660
Escanaba, Delta	37,780	95	66	185	555
Kingsford, Dickinson	26,831	99	79	190	570
Iron River, Iron	13,175	64	88	195	585
L'Anse, Baraga	7,954	50	67	200	600
Ontonagon, Ontonagon	8,854	32 acute care 45 long term care	115	225	675
Hancock, Houghton	35,446	123	100	210	630
Total	249,596	NA	NA	\$2,090	\$6,270

* Telemedicine equipment, video teleconferencing and/or teleradiology, may not be located at the hospital.

† All Upper Michigan highways are two lanes except 50 miles on the east end of the region between the Mackinaw Bridge and Sault Sainte Marie.

☆ Marquette has eight ISDN lines at \$20 each per month, two lines for each of two interactive systems and six lines for a six port multipoint control unit.

- Current ISDN transmission costs per year for the video teleconference portion of the network: \$25,080.
- ISDN transmission costs per year for the video teleconference portion of the network if we were to increase bandwidth to 1/4 T1 (3 ISDN lines): \$75,240.